

### **REMARKS**

Favorable consideration of this Application as presently amended and in light of the following discussion is respectfully requested.

Foremost, Applicants thank the Examiner for withdrawing previous rejections under 35 USC 112, first and second paragraphs, 35 USC 102, and 35 USC 103 over Barth in view of Bohn.

Claims 1 and 22 have been amended to clarify that “the porous silicon membrane produces a change in both an optical characteristic and an electrical characteristic of the porous silicon membrane and wherein the porous silicon membrane is a sensor exhibiting sensing characteristics causing a change in at least one of the optical characteristic and the electrical characteristic in response to exposure to a targeted fluid or reaction.”

Claims 68 and 69 have been made independent claims.

Claims 70-73 recite that “the porous membrane consists of a porous silicon membrane.”

### **Rejection under 35 U.S.C. § 103**

The outstanding Office Action has rejected Claims 1, 10-22, 31-40, 64-66, 68, and 69 under 35 U.S.C. § 103 as allegedly being unpatentable over Bohn (U.S. Patent Publication No. 2003/0136679) in view of Zimmermann et al. (U.S. Patent Publication NO. 2003/0148524, hereinafter Zimmermann).

This rejection is respectfully traversed.

Foremost, Applicants respectfully submit that the limitations of claims 13, 14, 34, 35 were not addressed in the pending rejection. On page 6, line 6 from the bottom of the Action, the Examiner refers to claim 14 and states that “Bohn teaches the substrates 24, 26 made of silicon or polydimethyl siloxane (PDMS), see paragraphs [0025], [0039].” However, claim 14 prior to the present Amendment recited that “the porous membrane is made of porous polysilicon (PPSi).” Claim 14 did **not** recite that the **substrate** is made of porous polysilicon as this claim was read incorrectly by the Examiner.

Claims 1, 22, 68 and 69 now recite that “the porous silicon membrane produces a change in both an optical characteristic and an electrical characteristic of the porous silicon membrane and wherein the porous silicon membrane is a sensor exhibiting sensing characteristics causing a change in at least one of the optical characteristic and the electrical characteristic in response to exposure to a targeted fluid or reaction.” In short, the porous silicon membrane **itself** produces a change in both an optical characteristic and an electrical characteristic and is a sensor. In the paragraph bridging pages 3 and 4 of the Action, the Examiner states that “[t]he porous membrane 22 is a sensor exhibiting sensing characteristics causing a change in an electrical characteristic in response is to response to a targeted fluid or reaction.” Applicants respectfully submit that the porous membrane 22 **itself is not** is a sensor exhibiting sensing characteristics causing a change in an electrical characteristic in response is to response to a targeted fluid or reaction as required in light of the amendments of claims 1, 22, 68 and 69.

On page 4, lines 7-8, from the bottom of the Action, the Examiner acknowledges that “Bohn does not specifically teach the membrane being made of a porous silicon

membrane.” Then the Examiner attempts to fill this gap by relying on the disclosure in paragraph [0028] of Zimmermann which states, “a membrane filter comprising **electrically high-insulating material**. For example, a commercially available membrane filter comprising polycarbonate, silicon nitride or another **electrically insulating material** ... .” [Emphasis added.] The Examiner states that as claims 1, 22, 68 and 69 recite “wherein the porous membrane comprises a porous silicon membrane,” porous silicon nitride reads on the “porous silicon membrane.” While porous silicon nitride could have arguably read on the “porous silicon membrane” of claims 1 and 22 as these claims previously recited “the porous membrane is configured to produce a change in both an optical characteristic and an electrical characteristic of the porous membrane and wherein the porous membrane is a sensor exhibiting sensing characteristics causing a change in at least one of the optical characteristic and the electrical characteristic in response to exposure to a targeted fluid or reaction,” and did not require that “the porous **silicon** membrane **produces** a change in both an optical characteristic and an electrical characteristic of the porous **silicon** membrane and wherein the porous **silicon** membrane is a sensor exhibiting sensing characteristics causing a change in at least one of the optical characteristic and the electrical characteristic in response to exposure to a targeted fluid or reaction” as now recited in claims 1, 22, 68 and 69. Porous silicon nitride is electrically high-insulating material as stated by Zimmermann. Therefore, porous silicon nitride does **not** read on the limitation “the porous **silicon** membrane **produces** a change in both an optical characteristic and an electrical characteristic of the porous **silicon** membrane and wherein the porous **silicon** membrane is a sensor exhibiting sensing

characteristics causing a change in at least one of the optical characteristic and the electrical characteristic in response to exposure to a targeted fluid or reaction.”

In short, even the combination of Bohn and Zimmermann fails to teach “the porous **silicon** membrane **produces** a change in both an optical characteristic and an electrical characteristic of the porous **silicon** membrane and wherein the porous **silicon** membrane is a sensor exhibiting sensing characteristics causing a change in at least one of the optical characteristic and the electrical characteristic in response to exposure to a targeted fluid or reaction.”

Applicants respectfully submit that even post-*KSR*, the USPTO cannot ignore the lack of teaching in the prior art *as a whole* of a claim element or limitation. For example, in *Kinetic Concepts, Inc. v. Blue Sky Medical Group, Inc.* Federal Circuit, February 2, 2009, Slip Opinion Nos. 07-1340, 07-1341, & 07-1342, the CAFC affirmed a nonobviousness determination as the prior art *as a whole* failed to teach “treating a wound with **negative** pressure.” [Emphasis added.]

Applicants clarify that on page 9, starting at line 3 from the bottom of the page, the Office Action of February 9, 2009, states, “Barth and Bohn do not teach the membrane being located in a hollow space formed by the first and second cavities in the upper and lower substrates.” Subsequently, on page 13, starting at line 6 from the bottom of the page, the Office Action of February 9, 2009, states, “Bohn does teach the use of a nanoporous membrane 22 disposed between the upper and lower substrates 24, 26.” In the Amendment of May 11, 2009, on page 13, starting at line 4 from the bottom of the page, the undersigned stated:

In fact, the Examiner has acknowledged that ““Bohn does not teach the use of a nanoporous membrane 22 disposed between the upper and lower substrates 24, 26” and then contradicts himself by stating “Bohn does discuss the desirability of placing the nanoporous membrane between the upper and lower substrates ... .”

What Applicants intended to state was the following:

In fact, the Examiner has acknowledged that “Barth and Bohn do not teach the membrane being located in a hollow space formed by the first and second cavities in the upper and lower substrates.”

Applicants respectfully submit that neither Bohn nor Zimmerman disclose “the porous silicon membrane is an integral part of the substrate” as recited in claims 68 and 69. As explained above, the Examiner has acknowledged that “Bohn do[es] not teach the membrane being located in a hollow space formed by the first and second cavities in the upper and lower substrates” On page 3, lines 5-6, from the bottom of the Action, the Examiner states, “The Bohn device also includes a porous membrane 22 integral with the substrates 24, 26.” Applicants have reviewed Bohn and do not find a porous membrane 22 integral with the substrates 24, 26 in the Bohn device. Figure 4 of Bohn clearly shows that the porous membrane 22 is separate from the substrates 24, 26.

Claims 1, 22, 68 and 69 further recite, “wherein the upper substrate member comprises a first cavity and the lower substrate member a second cavity, and wherein porous silicon membrane is located in a hollow space formed by the first and second cavities.” Nowhere does Bohn disclose a porous substrate located in a hollow space formed by the first and second cavities located in the upper and lower substrate members of Bohn.

**Double Patenting Rejection**

The Official Action has provisionally rejected Claims 13, 14, 34, and 35 under the judicially created Doctrine of Obviousness-type double patenting over Claims 38, 39, and 41 of co-pending Application Serial No. 10/856,372. Applicants appreciatively acknowledge the double patenting rejection being held in abeyance until the indication of allowance of the claims.

**CONCLUSION**

Consequently, in view of the foregoing amendment and remarks, it is respectfully submitted that the pending claims are patently distinguished over the prior art, in condition for allowance, and such action is respectfully requested at an early date. The Director is authorized to charge any additional fees necessary and/or credit any overpayments to Deposit account 03-3975, referencing Docket No. 043395-0378243.

Respectfully submitted,

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